

From: [ANDERSON Jim M](#)
To: [Eric Blischke](#); [Chip Humphrey](#)
Cc: [POULSEN Mike](#); [MCCLINCY Matt](#); [GAINER Tom](#); [PETERSON Jenn L](#)
Subject: FW: FSP Comments
Date: 07/27/2007 10:46 AM

Eric,

I sent you DEQ's preliminary comments of the LWG's 5/07 "*Draft RD3B Surface & Core Sediment FSP, Preliminary Tech Memo*" in my 6/7/07 e-mail below. We don't have any additional comments.

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-----Original Message-----

From: ANDERSON Jim M
Sent: Thursday, June 07, 2007 4:30 PM
To: 'Blischke.Eric@epamail.epa.gov'; Humphrey.Chip@epa.gov
Cc: MCCLINCY Matt; POULSEN Mike; PETERSON Jenn L; GAINER Tom
Subject: FSP Comments

Eric,

I understand tomorrow (6/8/07) you're going to submit to the LWG EPA/partners': 1) initial concerns with the 3 LWG RD 3B FSPs; 2) a rough scope of work for filling TZW data gaps; & 3) rough justification (biota DQOs) & scope of for biota sampling. I further understand EPA/partners will get more time to develop more detailed comments on the 5 groups of data gaps before you submit more complete comments/direction to the LWG on 7/1/07.

I reviewed 2 of the 3 LWG RD3B FSP Tech Memos, here are my comments. Hope they help. Best of luck.

LWG's 5/21/07 "Upriver & Multnomah Channel Sediment Evaluation & FSP Tech Memo"

I don't have any substantive comments. I think the approach & scope of work the LWG proposed is reasonable & should likely be able to achieve the stated objectives. I know there are still some outstanding questions re: establishing background..., eg., should we use a mean, upper limit, or UCL on a mean. We'll want

to resolve these concerns & review the scope of work in more detail, but I think the FSP looks good.

LWG's 5/07 "Draft RD3B Surface & Core Sediment FSP Preliminary Tech Memo"

The scope of work the LWG proposes in this prelim FSP only addresses N&E & FS (volume) data gaps associated with the iAOPCs they developed in the RD2 SCSR. The LWG did **not** suggest any work outside their iAOPCs in the Study Area in this FSP. The LWG used their SLRA & RD2 risk assessment to develop their iAOPCs, & EPA/partners have a lot of concerns about that risk assessment process. The result is that while the iAOPCs may cover a lot of the areas we are concerned with..., they don't cover all the areas & they don't include all the COIs that may drive risk.

EPA/partners developed a very comprehensive approach to identify benthic toxicity data gaps & a scope of work to fill those data gaps (surface sediment samples & bioassays). I think this approach will go a long way to evaluating the N&E outside the iAOPCs. The only obvious type of data gap that may be missing from EPA/partners' benthic toxicity approach are data gaps associated with endpoints other than benthic toxicity (e.g., bioaccumulation or HH). Another concern is buried sediment contamination outside the iAOPCs.

Matt sent you DEQ's comments on Sections 11.3 & 12 of the RD2 SCSR on 6/4/07 (see attached e-mail). These comments include what we consider data gaps inside the LWG's iAOPCs.

<<Round 2 Report DEQ Comments Chapter 11>>

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----- Message from "MCCLINCY Matt" <Matt.Mcclincy@state.or.us> on Mon, 4 Jun 2007 15:13:20 -0700 -----

To: <humphrey.chip@epa.gov>, <Blischke.Eric@epamail.epa.gov>

cc: <koch.kristine@epa.gov>, "ANDERSON Jim M" <Jim.M.Anderson@state.or.us>

Subject: Round 2 Report DEQ Comments Chapter 11

Chip & Eric,

DEQ project managers (PMs) reviewed Chapter 11 of the LWG Round 2 Report. The focus of their review was to evaluate the conceptual release models presented for the various upland and overwater activities and sites for consistency with DEQ's conceptual understanding. PMs were specifically asked to look for and highlight any discrepancies that would impact Round 3B data collection. PM review comments generally fell into three categories:

- Comments that are important for Round 3B data gap identification.
- Questions or uncertainty regarding the contaminant risk screening process and why certain contaminants of interest or of potential concern screened out and were not carried forward into Round 3B site characterization data quality objectives.
- Factual errors in the site summaries or conceptual models or upland status updates

You should be aware that DEQ remains concerned with the screening level risk assessment & RD2 risk assessment the LWG conducted for the RD2 SCSR as described in our General Comment below. Our major concern with the LWG's risk assessment process is that they reduced several hundred COIs to 17 iCOCs. Two major problems arise from this culling of COIs to a very limited set of iCOCs. 1st, the iAOPCs are largely defined by these iCOCs. There may be COIs (in addition to the iCOCs the LWG identified) that contribute to risk inside the iAOPCs, but those COIs may have been improperly excluded from further consideration thru the LWG risk assessment. We have tried to identify these other potential risk-driving COIs in the iAOPCs in our comments below. 2nd, there may be areas outside the LWG-defined iAOPCs that pose unacceptable risk, but have not been identified because that unacceptable risk is based on COIs that have been excluded as iCOCs thru the LWG risk assessment process. Our comments do not address this concern. We understand the EPA/partners' benthic risk identification effort (led largely by Rob N, Ben S, Joe G, Burt S, & Eric) will help identify risk outside the iAOPCs, but this effort is restricted to benthic toxicity.

Comments that are important for Round 3B data gap identification

iAPOC 1- OSM

In Section 12 of the report, the LWG concluded that several additional surface sediment & cores samples were needed to better refine the margins of the iAOPC. However, the LWG only identified PCBs as iCOCs & Zn & DBP as potential iCOCs. The LWG should include these other likely risk-driving COIs in the analyte list: Cr, Pb, & PAHs.

iAPOC 2- OF-53A & OSM

In Section 12 of the report, the LWG concluded that..., since this iAOPC is based only on a single-station PCB hit..., this iAOPC may disappear based on analysis of additional site-wide data. They further concluded that if this iAOPC is retained..., several RD3B surface &

subsurface sediment samples would be collected to fill data gaps. 4 surface sediment & 2 core stations exist in this iAOPC. Several additional surface & subsurface sediment samples & bioassays in both the vicinity of the iAOPC would help draw a more complete, more detailed picture of sediment contamination, but we don't think they are needed to complete the risk assessments & FS.

iAOPC 4- PEO & Schnitzer Steel

In Section 12 of the report, the LWG concluded that several additional surface sediment samples were needed, but no additional cores were needed. The question of whether a complete GW contaminant pathway exists at the PEO site is still unresolved. The LWG should conduct a TZW sampling effort at PEO. The TZW effort should be conducted along most of the PEO riverfront from the downstream dock into the mouth of the International Slip. The TZW effort should focus on petroleum hydrocarbons & HVOCs.

iAOPC 5- Schnitzer Steel/T4 Slip 1

In Section 12 of the report, the LWG concluded that several additional surface sediment samples (but no cores samples) should be collected to refine PCB distribution. The LWG should collect these samples, but also analyze the samples for other likely risk-driving COIs such as dioxin, pesticides, & PAHs. Perhaps the best location of these additional samples would be channel-ward of existing samples.

iAOPC 6- Arco/BP

iAOPC 6 is based solely on the results of a bioassay. In Section 12 of the report, the LWG concluded that only 1 additional core was needed to better refine the extent of contamination in iAOPC 6. The LWG identified Hg, Ag, & DRH as iCOCs. PAHs are also likely risk-drivers at the site. The extent of sediment contamination in the vicinity of the Arco/BP site is likely adequate to support the risk assessments & FS. Any additional sediment sampling should include PAHs as an analyte.

iAOPC 7 Marcom North and South

1. Visible sandblast grit is present along the exposed beach area. The Marcom South responsible parties are in the planning stages of an upland/beach area removal action to address sandblast grit. The in-water nature and extent is a data gap which needs to be addressed to delineate the distribution of grit in-water and the future boundary of the pending upland action.

The LWG identified PCBs as the iCOC, and Ag & DRH as potential iCOCs for iAOPC 7.

In Section 12 of the report, the LWG concluded that several additional surface sediment & core samples were needed to better refine the margins of iAOPC 7. The LWG should collect these samples, but also analyze the samples for other likely risk-driving COIs such as PAHs, metals and TBT. Perhaps the best location of these additional samples would be channel-ward of existing samples.

iAOPC 8- former Marine Finance

The LWG identified PCBs as the iCOC for iAOPC 8. In Section 12 of the report, the LWG

concluded that only 1 additional core sample was needed to better refine the volume estimate. The lateral extent of contamination appears to be adequately defined to support the risk assessments & FS. However, any additional sediment sampling in iAOPC 8 should include TBT & hexachlorobenzene as analytes. It appears PAHs at iAOPC 8 may be sourced from Gasco & pesticides at iAOPC 8 may be sourced from Rhone Poulenc &/or Arkema. Additional sampling should also include PAHs & pesticides and dioxin as analytes.

iAOPC 10- Crawford St & City Water Lab

The LWG identified PCBs & As as iCOC for iAOPC 10. In Section 12 of the report, the LWG concluded that additional surface sediment & core samples were needed to better define this iAOPC. The LWG should collect these samples, but also analyze the samples for other likely risk-driving COIs such as metals (Zn in particular), TBT, pesticides, & PAHs.

iAOPC 11 – includes the Siltronic and Gasco sites

1. The indentation in the iAOPC boundary off-shore of the northern corner of the Siltronic facility should be removed (i.e., the AOPC should be roughly rectangular in shape) to ensure that TCE contamination “Area 2” is fully contained within the area.

2. The boundary of this iAOPC may need to be adjusted pending the results of the in-water Phase 2 Offshore Field Sampling Approach that will be conducted by NW Natural beginning in July 2007

iAOPC 12 - Nav Channel of Willamette Cove

The LWG identified PCBs as iCOC for iAOPC 12. In Section 12 of the report, the LWG concluded that additional surface sediment samples were needed to better define this iAOPC. The LWG should collect these samples, but also analyze the samples for other likely risk-driving COIs such as dioxin.

iAOPC 13 (Willamette Cove, downstream of M&B)

1. The basis for extending the area of iAOPC13 over the McCormick & Baxter Site (M&B) sediment cap is questioned. Rather, it may be more appropriate to terminate iAOPC13 at the edge of the sediment cap and to extend this iAOPC to include all of the area between the sediment cap and the current downstream boundary of iAOPC13. This boundary revision would result in iAOPC13 being segregated from iAOPC12.

2. The footprint of the M&B sediment cap is incorrectly shown on the folio maps. The maps should be updated with as-built drawings of the M&B sediment cap. (The difference is very significant along the shoreline where the sediment cap extends several hundred feet further into Willamette Cove.)

3. Volume II of the report provides various references to sources of contamination originating or potentially originating from the M&B site but does not clarify that these releases occurred prior to implementation of the M&B remedial actions. Furthermore, Volume II of the report does not adequately distinguish between pre- and post-RA sampling results (e.g.,

sediment sample locations which have since been covered by the sediment cap). Also, Volume II does not provide or reference M&B data collected since remedy implementation. For example, the Oregon DEQ has collected surface water and sediment pore water samples from within the sediment cap footprint in Willamette Cove in fall-2002, fall-2003, fall-2005, spring-2006, fall-2006 and spring-2007. By excluding these data and focusing on historic, pre-RA conditions, the CSM raises undue uncertainty about the nature, extent and source of iCOPs in IAOPC13.

4. The iAOC13 CSM presentation should identify and discuss the potential for hazardous substances to be associated with the submerged barge located along the Willamette Cove shoreline, in the vicinity of the historic dry docks, as shown in the figure below. This barge is located close to several of the highest sediment PCB sample locations. This barge should not be confused with the barge incorrectly shown on Folio Map 11.3.10-1, which was removed in 2004.

November 2004 Multibeam bathymetric survey performed by DEQ following construction of the M&B sediment cap.

5. Surface water and tissue data from the cove suggest an active PCB source which is not consistent with the sediment data. Additional investigation is needed to identify the PCB source suggested by the high surface water and tissue detections.

6. The iAOC13 CSM presentation does not adequately describe the petroleum contamination located along the shoreline in the northeastern corner of Willamette Cove (Section 11.3.10.3.4 downplays its nature and extent). This contamination was discovered during construction of the M&B sediment cap and was confirmed to be a separate and discrete source from the M&B site. Although contaminated sediments located above Ordinary Low Water (OLW) were removed by DEQ's construction contractor, under an interagency agreement with Metro, substantial contamination remains below OLW. The nature and extent of the remaining contamination should to be characterized.

7. Section 11.3.10.3.3, Overwater Discharge, Page 11-175, 1st full paragraph – The text should also identify as a potential overwater source the transformers which were historically located overwater on the former dry docks.

8. The LWG identified PCBs, dioxin, & pesticides as iCOC & Hg & TPH as potential iCOCs for iAOPC 13. In Section 12 of the report, the LWG concluded that additional surface sediment & core samples were needed to better define this iAOPC. The LWG should collect these samples, but also analyze the samples for other likely risk-driving COIs such as TBT & PAHs.

iAOPC 14 Rhone Poulenc

1. Despite the availability of transition zone water data, intermediate/deep groundwater discharges into or below the river and has not been fully characterized. Given that the contaminant levels in the intermediate/deep groundwater zone may exceed levels observed in

shallower transition zone data, characterization of the Rhone Poulenc groundwater discharge is considered a data gap.

2. The Round 2 Report focuses on chloroform and TCE as being the primary concern for the groundwater pathway. Other VOCs such as chlorobenzenes and vinyl chloride are present. Arsenic, dioxins/furans, phthalate and silvex are also concerns. While upland groundwater plumes may generally not be expected to be a significant source of dioxins, dioxin transport via the groundwater pathway is a concern for the Rhone Poulenc groundwater plume and is currently being evaluated. Note that the dioxin plume at Rhone Poulenc extends farther north on the Siltronic property than is shown. The Rhone Poulenc 1,2-Dichlorobenzene plume extends farther north than shown, almost to the boundary between Siltronic and NW Natural. Benzene and TCE extends from the Rhone Poulenc facility to the river and south to Arkema Lots 1 & 2 and north to the BNSF railroad. Also, a petroleum plume originates from the Rhone Poulenc facility which is not shown on the summary groundwater figures.

3. Section 11.1.3.3.3 With only three surface water samples, the LWG concludes that “loads generally increase through the Study Area to RM 6.3”. It is more likely the middle data point at RM 6.3 reflects a spike in concentrations of pesticides related to Rhone Poulenc and Arkema rather than a study area trend. This is an important distinction and additional characterization may be necessary to clarify the need for remedial measures.

iAOPC 15 (City outfall 048, upstream of M&B)

1. The basis for extending the area of iAOPC15 over the M&B sediment cap is questioned. Rather, it may be more appropriate to terminate iAOPC15 at the edge of the sediment cap and extend this iAOPC to include all of the area between the sediment cap, Triangle Park and the riverward edge of the historic dock discussed in the specific comment below.

2. Potential impacts from the former dock structure as well as historic operations over the dock should be discussed as a potential data gap for iAOPC15.

3. The footprint of the M&B sediment cap is incorrectly shown on the folio maps. The maps should be updated with as-built drawings of the sediment cap. (Although, the deviation is minor for iAOPC15, the difference is very significant for iAOPC13 where the sediment cap extends several hundred feet further into Willamette Cove.)

4. The Volume II report provides various references to sources of contamination originating or potential originating from the M&B site but does not clarify that these releases occurred prior to implementation of the M&B remedial actions. Furthermore, the Volume II report does not adequately distinguish between pre- and post-RA sampling results (e.g., sediment sample locations which have since been covered by the sediment cap). Also, the Volume II report does not provide or reference M&B data collected since remedy implementation. For example, the Oregon DEQ has collected surface water and sediment pore water samples from within the sediment cap footprint in Willamette Cove in fall-2002, fall-2003, fall-2005, spring-2006, fall-2006 and spring-2007. By excluding these data and focusing on historic, pre-RA conditions, the CSM raises undue uncertainty about the nature, extent and source of

iCOPs in IAOPC15.

6. Section 11.3.12.1.1, In-River, Page 11-207, 3rd paragraph – The statement that most structures have been removed is not entirely correct. A very large dock historically separated the Triangle Park and M&B properties. This dock extended into the river forming a “T”. The Triangle Park property was filled landward of the dock. The portion of the dock extending in front of the M&B property appears to have mostly collapsed into the river by the early 1970s. Several hundred pilings of this dock were removed in 2004 as a conservation measure of the Endangered Species Act Biological Opinion. During these removal operations, construction workers reported substantial debris, presumable the dock’s surface decking, littering the river bottom.

1951 Aerial photo of large wooden dock located between Triangle Park and McCormick & Baxter.

7. The LWG identified dioxin as an iCOC & As as a potential iCOC for iAOPC 15. In Section 12 of the report, the LWG concluded that additional surface sediment samples were needed to better define this iAOPC. The LWG should collect these samples, but also analyze the samples for other likely risk-driving COIs such as Zn & PAHs.

iAOPC 16- Triangle Park

The only iCOC the LWG identified thru their risk screening & RD2 risk assessment for iAOPC 16 is PCBs. iAOPC 16 is restricted to the downstream corner of the embayment at Triangle Park. The upstream corner of the embayment contains elevated concentrations of metals, TBT, PCBs, PAHs, TPH, & possibly pesticides.

In Section 12 of the report, the LWG identified the need for additional RD3B surface & subsurface sediment samples in iAOPC 16. Additional surface & subsurface sediment samples & perhaps bioassays in both the iAOPC & sediments in the embayment would help draw a more complete, more detailed picture of sediment contamination, but I'm not sure much more data is needed to support the BRAs & FS. The lab program should be expanded to include the expanded list noted above should additional testing be conducted.

iAOPC 17- Willbridge

The only iCOCs the LWG identified thru their risk screening & RD2 risk assessment for iAOPC 17 were PCBs, pesticides, & dioxin. In Section 12 of the report, the LWG identified the need for additional surface & subsurface sediment samples in iAOPC 17. Any additional surface & subsurface samples should also be analyzed for these other potential risk-driving chemicals: PAHs & TPH.

iAOPC 18- Shaver Transportation/Front Ave LP, OF 19

The only iCOCs the LWG identified thru their risk screening & RD2 risk assessment for iAOPC 18 were PCBs Amonia was identified as a potential iCOC based on bioassay). In Section 12 of the report, the LWG identified the need for additional surface & subsurface sediment samples to better define the margins of iAOPC 18. Any additional surface & subsurface samples should also be analyzed for these other potential risk-driving chemicals:

metals (specifically As, Hg, & Zn), dioxin, pesticides, PAHs, DBP, & TPH. Likely sources of iAOPC sediment contamination include OF 19, & Shaver's overwater operations. Other possible upland sources of iAOPC 18 sediment contamination include bank erosion, overland runoff, & several private &/or public OFs that discharge in the vicinity of iAOPC 18.

iAOPC 20- OFs S5 & 163 (riverside of Swan Island)

The only iCOCs the LWG identified thru their risk screening & RD2 risk assessment for iAOPC 20 were PCBs. In Section 12 of the report, the LWG identified the need for additional surface & subsurface sediment samples in iAOPC 20. Any additional surface & subsurface samples should also be analyzed for pesticides, another potential risk-driving chemical.

iAOPCs- 21, 22, & 23 Portland Shipyard & Swan Island Lagoon

The only iCOCs the LWG identified thru their risk screening & RD2 risk assessment for the 3 iAOPCs were PCBs. The LWG also identified As, Zn, DBP, & TPH as potential iCOCs for iAOPC 21 (shipyard). In Section 12 of the report, the LWG did not identify the need for additional surface samples, but identified the need for several additional cores. We agree that the iAOPCs are generally sufficiently characterized to support the BRAs & FS. However, any additional sampling should also include the following likely risk-driving chemicals: metals (particularly As in iAOPC 22, Hg in iAOPCs 22 & 23, Zn in all 3 iAOPCs); TBT in all 3 iAOPCs; possibly dioxin in all 3 iAOPCs; possibly pesticides in all 3 iAOPCs; PAHs in all 3 iAOPCs; DBP in iAOPCs 22 & 23; & TPH in iAOPCs 22 & 23.

iAOPC 24- Fire Boat Cove

The only iCOC the LWG identified thru their risk screening & RD2 risk assessment for iAOPC 24 were PCBs. In Section 12 of the report, the LWG identified the need for additional 1 surface & 1 subsurface sediment sample in iAOPC 24. Any additional surface & subsurface samples should also be analyzed for these other potential risk-driving chemicals: metals (particularly Zn), dioxin, pesticides, possibly PAHs, DBP, & possibly TPH. Zn is specifically called out as DEQ has documentation of discharge of Zn-containing galvanizing process wastes to the storm line discharging to the cove.

iAOPC 26- Sulzer Pump/OF 15

The only iCOC the LWG identified thru their risk screening & RD2 risk assessment for iAOPC 26 were PCBs. In Section 12 of the report, the LWG identified the need for several additional surface & subsurface sediment samples in iAOPC 26. Any additional surface & subsurface samples should also be analyzed for other potential risk-driving COIs like pesticides, metals & PAHs.

iAOPC 27- WR 282, WR 282, WR 291 & OF 45

The only iCOC the LWG identified thru their risk screening & RD2 risk assessment for iAOPC 27 were PCBs. In Section 12 of the report, the LWG identified the need for 1 additional surface & 1 subsurface sediment samples in iAOPC 27. Any additional surface & subsurface samples should also be analyzed for other potential risk-driving COIs like TPH & PAHs.

COI Screening

iAOPC 3, 4 and 5 Schnitzer Steel and Burgard Industrial Park

Section 11.3 - Not clear why many of the upland COIs (metals, in particular Pb) didn't make risk screening cut for iAOPCs 3, 4 and 5 (PCBs, DRH, RRH, ZN, DBP and Endrin Ketone). RRH and Zn are listed as part of iAOPC3 but not discussed in text.

iAOPC 7 Marcom North and South Parcel

Several upland COIs didn't make it past screening process and are not listed as iCOCS in sediment for iAOPC 7 (butyltins is an example). Text discusses disconnect between upland and sediment iCOCs well. iAOPC 7 is for PCBs and potentially Ag and DRH, upland sources of these Ag and DRH are not clear, if any, there is some minor PCB contamination in upland soils not discussed in text. Likely sources are historic and historic over water activities.

Table 10.5-1 - Several upland COIs were screened out (Cr, Pb,Cu,Zn, PAHs, butyltins).

iAOPC 10 Crawford Street Corp./BES Water Lab

Section 11.3.8 - iCOCs include PCBs and arsenic, yet other metals were detected above PECs in post-excavation beach samples in 2001.

iAOPC 11 Gasco and Siltronic

1. The lists of iCOCs and iCOPCs are limited by available data and should be considered preliminary. NW Natural will be supplementing the in-water dataset in July 2007. The lists should be reviewed and revised based on the results of this work, especially for constituents of MGP waste (e.g., PAHs, cyanide, metals, and BTEX compounds).

2. TCE and its breakdown products, most notably vinyl chloride, have been detected in TZW at concentrations that exceed human health criteria. These chemicals should be considered for inclusion in the lists.

TABLE 10.5-1
Human Health

- Analyte list should be reviewed and revised pending the results of the in-water Phase 2 Offshore Field Sampling Approach to be conducted by NW Natural beginning in July 2007
- The presence of NAPL from historic MGP operations observed in shallow sediments likely overwhelms the direct contact exposure scenarios involving individual analytes
- Cyanide should be considered an iCOC for the fish consumption pathway
- Vinyl chloride should be considered an iCOC for the fish

consumption pathway

Ecology

- Analyte list should be reviewed and revised pending the results of the in-water Phase 2 Offshore Field Sampling Approach to be conducted by NW Natural beginning in July 2007
- The presence of NAPL from historic MGP operations observed in shallow sediments likely overwhelms the benthic toxicity associated with the individual analytes shown

iAOPC 14 Rhone Poulenc

A number of iCOCs are screened out for the Rhone Poulenc iAOPC. For example, arsenic is present at the beach near the railroad bridge well in excess of industrial PRGs and background values. There are a large suite of organochlorine pesticides upland and in-river than are not discussed.

iAOPC Arkema

DEQ questions the contaminant screening results for sediments adjacent to the Arkema site as some significant COPCs were screened out (e.g., perchlorate, chlorobenzene and chromium).

iAOPC 14 Calbag

Section 11.3.14 - iCOCs include PCBs, yet elevated metals (cadmium, chromium, copper, and lead) and phthalates in storm system catch basin and piping sediment were encountered during 2005 removal activities suggesting a historical source of these other iCOCs to the river.

iAOPC 17 Willbridge Bulk Fuel Area

Section 11.3 - Surprised that hydrocarbons didn't make risk screening cut for iAOPC 17 (PCBS, DDx and Dioxin). All interim source control measures in upland are currently focused on hydrocarbon sources.

iAOPC 19 – includes Gunderson

Proposed iCOC & iCOPC List

These lists do not correspond with the COPC list currently in use in the uplands. In addition to the analytes listed in Section 11.3.15; arsenic, lead, zinc, copper PAHs, nickel, chromium, antimony, dibutyl phthalate, bis-(2-ethylhexyl)phthalate, selenium, butyltins, dibenzofuran, and dioxins/furans may be COPCs based on exceedances of sediment SLVs in sediment samples.

TABLE 10.5-1
Human Health

- The “Shellfish Consumption” category should be reviewed for additional analyte groups (e.g., metals)

Ecology

- Lead should be added to the list of analytes for the “Benthic Toxicity” category.
- Analyte list for “Benthic Toxicity” should be reviewed as concentrations of additional COI (e.g., bis-[2-ethylhexyl]phthalate, chromium, copper, zinc) exceed PECs &/or SLVs in sediments off-shore of portions of the site (e.g., marine barge launchways)

iAOPC 22 Freightliner TMP

Table 10.5-1 - Only PCBs listed. Metals, PAHs, and phthalates must appear to have been screened out.

Factual errors in the site summaries or conceptual models or upland status updates

iAOPC 1 (Oregon Steel Mills and adjacent sites):

Volume IV, Map Folio (2 of 2):

1. Map 10.5-3j – This map is intended to show iAOCs within River Mile 10 to 11. Instead, this map shows River Mile 2 to 3.

2. Section 11.3.1.3.5, Riverbank Erosion, Page 11-70, 2nd full paragraph, last sentence – The source control measure currently being evaluated by DEQ includes bank stabilization, removal and capping.

iAOPC 3, 4 and 5 Schnitzer Steel and Burgard Industrial Park

1. Section 11.3 - Obvious that some some upland COIs (metals, in particular Pb) didn't make risk screening cut for iAOPCs 3, 4 and 5 (PCBs, DRH, RRH, ZN, DBP and Endrin Ketone). RRH and Zn are listed as part of iAOPC3 but not discussed in text. There are known minor sources of PCBs and hydrocarbons in shallow soil within the watershed. DRH/RRH is only iCOC that makes clear sense from uplands standpoint right now. Upland investigations are ongoing. Multitude of contaminants have been detected in sediment without direct tie to uplands, stormwater, historic and over water activities are likely source.

2. Time Oil (Table 5.1-2) – Groundwater is a complete pathway (a) but only historic (h) not current and only because of infiltration of groundwater into the storm drain. Setting aside groundwater, the stormwater/wastewater pathway has insufficient data to make a determination (c) Overland transport is not a complete pathway (d).

T-4

Table 10.5-2 Terminal 4, Slip 3. Overwater discharge COIs should include metals (7) and are a documented complete pathway historically.

iAOPC 6 Arco

Section 11.3.5

1. iCOCs include mercury and silver, which do not appear to be site related.
2. Sediment DRH is assumed to come from Arco; Arco has done forensic evaluation of PAH sources that should be considered.
3. Near-shore sediment removal planned for this summer/fall should be incorporated in to the in-water RI/FS and additional subsurface boring planned for Round 3 (see Section 12.3.3.6.2).

iAOPC 7 Marcom North and South Parcel

1. Section 11.3 - Map references are in error and refer to the iAOPC 8 not 7.
2. There are some questionable conclusions drawn about outfall 52A and the private outfall WR-285, there is not enough stormwater data to support the conclusions.

Table 5.1-2 - Consistent with SC milestone report, South Parcel also had stained soil and several sandblast grit piles. Historically, over water and potential over water sources were probably present.

iAOPC 9 Marine Finance

1. Substantial source control work has been conducted at the site, including excavation of over 1000 cubic yards of surface soil to eliminate soil concentrations above JSCS levels. COPCs were monitored in groundwater. All < SLVs in 3 sampling events. Little if any mention of this is made in Section 11.3. Other source control measures included capping of the site with asphalt and/or the building, virtually eliminating the overland flow or storm water pathway as pathways of concern. Storm water sampling has shown COPCs to be below JSCS criteria.
2. The way the site activities are described (historic versus current) is confusing. Here is a current description of site activities:

Advanced American Construction, Inc. (AAC) is a heavy, civil, marine contractor. The 7+ acre site at 8444 NW St. Helens Road, Portland, Oregon is AAC's headquarters (and only) site. AAC has owned the site since November 2004, occupied the new building May 8, 2006, and currently utilizes the entire site. None of the yard is leased to any other tenant for any other use. Site operations include barge and tug moorage, on-land and in-building equipment storage and maintenance, machine shop, and offices for support of off-site construction projects throughout the western United States. Hendren Towboats ceased operations and moved out September 1, 2005.

3. Map 11.3.7-1 It should be made clear in the text that the site has been developed and that virtually all site structures shown on the map and discussed in the text have been removed.

4. Section 11.3.7 This section states that PCBs were not identified as COIs by DEQ in the upland. This is incorrect. During the 2000 SI a total of three subsurface and seven surface soil samples were analyzed for PCBs. PCBs were not detected above the detection limit of 100 ug/kg. These data are contained in Appendix D of the October 2000 SI Report.

5. Section 11.3.7.1.2 As indicated above, information on site structures should be qualified (e.g., they should be identified as “former”).

6. Section 11.3.7.3.1 DEQ did not identify DDT group compounds during its expanded preliminary assessment as no source or use at the site was identified. The only evidence for DDT compounds was a drum labeled “pesticides” observed during the investigation. DDT was detected at moderate concentration (272 ug/kg) in one sample collected near the former Hendren Dock. DDT is an area-wide contaminant in Portland Harbor and there are DDT source areas immediately upstream.

7. DEQ has determined that PCBs were adequately evaluation and they were ruled out as a contaminant of potential concern at the site.

8. Section 11.3.7.4 DEQ provided oversight for the groundwater evaluation and concluded this pathways is not of concern. Metals were the only analytes to exceed JSCS screening criteria as discussed below.

Chromium copper, lead, mercury, nickel, silver and zinc were sporadically detected in groundwater samples. With the exception of silver, only one detected concentration for each of these metals exceeded screening criteria. Silver exceeded its screening criteria in two samples. Based on the general low frequency of detection, and very limited detections above screening level criteria, discharge of shallow groundwater does not appear to present a significant threat to the Willamette River for any of these metals. Arsenic was detected at a higher frequency (6 of 18 samples), but the reported concentrations are below the applicable screening criterion. This section should better reflect DEQ’s finding, or present the rationale for concluding that there is insufficient information to evaluate this pathway, as indicated on Table 11.3.7-2.

9. Table 11.3.7-3 DEQ does not agree that the site is a “medium” as a potential DDT source. It appears that this conclusion is based on the fact that a single drum on site was observed to be labeled “pesticides”, and one moderately elevated DDT sample collected near the Hendren Dock.

10. Table 10.5-1 The DEQ PM doe not agree with many of the conclusions in this table. The

table does not take into account source control actions and site investigation findings. The table lists “insufficient information” for a number of pathways. DEQ is preparing to NFA this site.

iAOPC 11 Gasco and Siltronic

Contaminant Transport Pathways

1. The groundwater (alluvial water-bearing zone [WBZ], alluvial WBZ) and riverbank erodible soils pathways are complete and currently considered the most significant uplands contaminant transport pathways in the iAOPC.

2. The storm water conveyance systems are potentially complete pathways and are currently being evaluated at both sites.

3. Source control for DNAPL, groundwater, and riverbank soils is required from the downstream property of the Gasco site to upstream of the former lowland effluent pond overflow areas on the Siltronic site. From there to the upstream property line of the Siltronic site source control is considered warranted and is being further evaluated during field work scheduled for this year.

Siltronic Corporation - DEQ recommends that following revisions be made to Table 5.1-2

1. ECSI # Other than Linnton Plywood (two ECSI nos.), Siltronic is the only site in the table that references multiple ECSI nos. (i.e., #84, #155, and #183). The actual ECSI no. for the Siltronic site is #183.

2. Potential Upland and Over-Water Source

The column should be revised as follows:

- Replace “north drainage ditch” with “Doane Creek”
- Delete “potential disposal area”

3. Storm/Wastewater

- COIs – For clarification, Siltronic is currently evaluating facility storm water conveyance system and has not identified all COIs shown in table which is more consistent with detections in Doane Creek.

NOTE: In general, the information provided in Table 5.1-2 differs from the Milestone Report because the LWG is compiling information that reflects potential current and historical

sources of impacts to the river located on the Siltronic property, including those originating from other sites. The Milestone Report focuses only on those attributable to Siltronic.

NW Natural/Gasco - DEQ recommends that following revisions be made to Table 5.1-2

1. Groundwater

- COIs – list should include “SVOCs” (No. 2) “TPHs” (No. 4)
- Potentially Complete Pathway – should be “a” (i.e., Documented evidence of complete pathway)

2. Storm/Wastewater

- COIs – list should include “SVOCs” (No. 2) “TPHs” (No. 4)

3. Riverbank Erosion

- COIs – list should include “SVOCs” (No. 2) “TPHs” (No. 4)

4. Figure 5.1-1c

- Extent of cyanide plume off-shore of the Siltronic and Gasco sites is incomplete and limited by available data
- Figure should be reviewed and revised pending the results of in-water Phase 2 Offshore Field Sampling Approach to be conducted by NW Natural beginning in July 2007

5. TCE plume originating from Siltronic is incomplete, should be depicted as being continuous from the uplands source (i.e., from former TCE USTs), under the river, and surrounding the areas of TZW exceedances shown.

- Extent of VOC plume should be reviewed and revised pending the results of in-water Phase 2 Offshore FSA to be conducted by NW Natural beginning in July 2007

6. Figure 5.1-1g

- Extent of SVOC plume off-shore of the Siltronic and Gasco sites is incomplete and limited by available data
- Figure should be reviewed and revised pending the results of in-water Phase 2 Offshore Field Sampling Approach to be conducted by NW Natural beginning in July 2007

7. Figure 5.1-1h

- Figure appears to be incomplete as groundwater has been heavily impacted by constituents of MGP waste (i.e., diesel-range and residual-range petroleum hydrocarbons)
- Figure should be reviewed and revised pending the results of in-water Phase 2 Offshore Field Sampling Approach to be conducted by NW Natural beginning in July 2007

iAOPC 13

1. Section 11.3.10, CSM for iAOPCs 12 and 13, Page 11-165, last paragraph – See general comments. Additionally, PCBs were determined in the M&B RI not to be a contaminant of concern.
2. Section 11.3.1, Chemical Distribution of iCOCs, Page 11-168 – This section does not adequately describe the petroleum contamination located along the shoreline in the northeastern corner of Willamette Cove. .
3. Section 11.3.10.3.3, Overwater Discharge, Page 11-175, 1st full paragraph – The text should also identify as a potential overwater source the transformers which were historically located overwater on the former dry docks.

iAOPC 15

1. Section 11.3.12.1.3, Upland Hydrogeology, Page 11-209, 5th full paragraph - The sediment cap was constructed over a two year period during 2004 and 2005; the barrier wall encompasses 18 acres; and the upland cap was placed over 41 acres. The purpose of the soil cap is to prevent direct contact with contaminated soil and help reduce infiltration...
2. Section 11.3.12.2.1, Sediments, Page 11-210, 1st full paragraph – The text should distinguish the sediment samples collected from locations which have since been covered by the sediment cap.
3. Section 11.3.12.3.4, Groundwater Discharge, Page 11-214, Last paragraph – Sampling of monitoring wells in May 2006 at the M&B site, including MW-3s and MW-59s (a new well located in the vicinity of MW-3s), for As, Cr, Cu, Zn, PAHs and PCP indicates low to non-

detectable levels of analytes in groundwater. These data should be used instead of the earlier 2002 sampling data. (Note that extensive surface water and cap pore water samples have been collected in the subject area between fall 2002 and spring 2007.)

4. Section 11.3.12.3.4, Groundwater Discharge, Page 11-215, 1st full paragraph – The purpose of the subsurface barrier wall is to minimize NAPL migration to the river.

iAOPC 18

Shaver Transportation

1. Section 11.3.14 Incorrect figure is referenced. It should be 11.3.14-1.
2. Section 11.3.14.2.1 While the highest PCB concentrations are located near the Shaver Dock, it should be noted that most samples in this area were collections near the docks, in an area of general sediment accumulation. The dock area is a back eddy. The proximity of these samples to Outfall 19 also should be noted here.

3. Section 11.3.14.4 Shaver Transportation is not included on Table 11.3.14-2.

4. Table 10.5-1 Although no significant source areas were identified, a number of pathways are listed as

“insufficient information”. The DEQ PM disagrees with the interpretation in this table.

iAOPC 19 Gunderson

Contaminant Transport Pathways

1. Based on the information collected at the site to date, the principal complete uplands contaminant transport pathways identified at the Gunderson site include; erosion of riverbank soils and storm water (i.e., erodible soils within 100 feet of catch basins, catch basin/oil-water separator sediments, and storm water).

2. Section 11.3.15.3.2 discusses Stormwater/Overland Transport at the site. Storm water is considered an uplands contaminant transport pathway warranting source control. Gunderson has collected a large amount of storm water system data, including a comprehensive catch basin/oil-water separator sediment sampling effort in the fall of 2006, however there is little discussion of site-specific data included in the report. Discussions of storm water emphasize potential sources to the City’s Outfall 18 drainage basin other than Gunderson. Future versions of the document should be revised to focus on Gunderson’s storm water and storm water system data.

3. Section 11.3.15.3.5 It should be noted that the actual riverbank fill material in Area 3 consists of debris such as firebrick, friable asbestos, ship engines etc. that may be wastes related to the former ship dismantling operations.

TABLE 5.1-2 and MILESTONE REPORT

DEQ recommends that following revisions be made to Table 5.1-2

1. Potential Upland and Over-Water Source

- This column should reference “railcar painting” and “ship dismantling”

2. Storm Water

- COIs - column should include “Phthalates” (No. 9)
- Historic/Current - column should indicate storm water is a “current” contaminant transport pathway

3. Overland Transport

- COIs - column should include “TPHs” (No. 4)

4. Riverbank Erosion

- COIs – column should include “TPHs” (No. 4) and “Other” (No. 10 for dioxins/furans)

iAOPCs 20, 21, 22 and 23

1. The DEQ PM is not sure that they agree that the Cascade General site is a likely current source for the PCB contamination found in iAOPC 22. The site is paved and the PCB sources were primarily historical and Cascade Generally cleans the stormwater system on a regular basis. However, this is something DEQ will consider in developing the work plan for stormwater evaluation at this site.

2. On page 11-262, the last dash refers to Berth 308 indicating that uses are unknown (also referenced in last bullet on page 11-265). The Port has completed an initial evaluation of the upland area associated with Berth 308 to support a No Further Action determination. The Port will be conducting one additional sampling event at this area to assess any residual contamination associated with a historical substation. If this sampling does not indicate contamination above risk-based levels, DEQ will proceed with the NFA for the upland. There are no current pathways for contamination migration to the Swan Island Lagoon.

3. The third bullet on page 11-265 discusses property associated with Berth 311. DEQ provided an NFA for a portion of this property owned by the Port in December 2005. The portion of the property covered by the NFA consists of an approximately 60-foot wide, 500-foot long, L-shaped driveway that provides access from North Basin Avenue to the southeast end of a concrete pier/lay berth located within and on the east side of Swan Island Lagoon. The Uplands site does not include the Berth itself or the immediate shoreline adjacent to the Berth and Swan Island Lagoon.

4. There are a few references (e.g., page 11-272 last part of first paragraph under iAOPC 21) to Cascade General discharging treated stormwater from the ballast water treatment plant to the river as an option under their NPDES permit. For the last several years Cascade General has directed this water to the City's sanitary sewer. Also, under iAOPC 22, 2nd paragraph, they identify discharge from the ballast water treatment plant as a potentially complete pathway to the river which is not true under this current operation.

5. On page 11-273, 1st paragraph under iAOPC 23 identifies the N Channel Ave fabrication site as a potential source - shouldn't this be a potential source to iAOPC 20? Later in the paragraph the report refers to this area as "this portion of the Cascade General site." If the reference is referring to the fabrication site - this is Port property.

6. In the 3rd paragraph from the bottom of page 11-279, the statement is made that no riverbank investigations have been performed at iAOPC 20. In Sept 2006, the Port collected samples along the shoreline of the N Channel Ave Fabrication site at three locations corresponding to discharge points of parking lot drains.

iAOPC 21 USCG

1. Section 11.3.16.3.1-2 incorrectly state that no soil investigations were conducted at the site; see 2/01 RI Report for soil results from 14 samples.

2. Sediment in six stormwater catch basins showed low levels of Aroclor 1254 and 1260; Aroclor 1254 (the dominant Aroclor in this Swan Island iAOPC) concentrations ranged from 14-1800 ug/kg (PEC = 300), and Aroclor 1260 ranged from 31-2200 ug/kg (PEC = 200). It is not clear to what extent the USCG site contributed to the in-water PCB contamination observed adjacent to their site compared to potential sediment movement (i.e., prop wash, etc.) from other Swan Island PCB sources.

iAOPC 22 Fred Devine Diving and Salvage (FDDS)

1. Page 11-273. It appears based on plumbing records that the oil water separator at FDDS was always plumbed to the sanitary sewer, and there is no indication that it ever discharged to the storm drain or river. Based on results from the XPA, DEQ has determined that the storm water pathway is the only pathway of concern to the river requiring evaluation in the Source Control Evaluation

2. Table 10.5-1 Based on results of PA, groundwater sampling was not required by DEQ. Table indicates this is "insufficient information" suggesting this is a potential pathway. Site waterfront is armored in rip-rap. Therefore bank erosion is not a complete pathway as determined by DEQ.

Freightliner TMP

1. Section 11.3 Only real connection to river is stormwater pathway via OF M-1. Aroclor 1254, Bis-2 phthalates, AS, Cd, Cr, CU, Pb and Zn recently detected in catch basin sediment

but not discussed in text. These should be included as potential COIs for stormwater pathway.

2. Table 5.1-2 - Generally consistent with SC Milestone report. Phthalates, PAHs, and possibly PCBs should be added to stormwater pathway COIs.

3. Map 5.1-1ah - Not shown on maps b/c too far upland. Small, low level VOC plume is generally stable and not determined to be threat to river.

iAOPC 24 GE

Section 11.3.17 While stormwater confirmation data is pending, onsite legacy sediment is unlikely due to recent extensive SCMs (Section 11.3.17.3.10)

iAOPC 24 AND GALVANIZERS COMPANY

1. Section 11.3.17 discusses iAOPC 24 (i.e., Balch Creek Cove) which includes the City Outfall 17 (OF 17). The second paragraph of Section 11.3.17.1 mentions the ECSI sites that discharge storm water into Outfall 17, including GE Decommissioning (ECSI #4003) and a portion of the Burlington Northern Railroad Yard (ECSI #100). Although Galvanizers Company (ECSI #1196) discharges storm water into the OF 17 sub-basin it is not mentioned.

2. The Galvanizers Company site is located nearly a mile from the river. As such, it only connection to the Portland Harbor is via storm water. Storm water data for the Galvanizers Company facility should be reviewed and the site considered as a potential source of impacts to iAOPC 24 for the following reasons.

- Certain site COI have been detected in storm water leaving the Galvanizers Company site at concentrations exceeding JSCS criteria (i.e., cadmium, copper, lead, and zinc).

- On-site storm water system sediment detections exceed PECs (lead, zinc) and default soil background values (cadmium, copper, lead, and zinc).

- Site COI have been detected in the City's lines at concentrations that exceed PECs (cadmium, lead, zinc) and soil background values (cadmium, lead, zinc).

- Analyses of sediment in the iAOPC detected site COI greater than PECs (zinc) and soil background values (lead, zinc).

3. Recent sediment data collected at the site suggest it may also contribute phthalates to the

City's storm lines and ultimately iAOPC 24.

iAOPC 26 Sulzer Pump

1. Section 11.3.19 The conclusion that there is an active source because shallow PCB contamination levels are similar to deeper levels is questionable. Section 11.3.19.1.1 indicates the area along the site is in "dynamic equilibrium" for sedimentation accumulation, defined as sediment moving in or out of the area with no net change. Therefore it is possible that surficial sediment and associated contamination may reflect upstream sources. It should be noted that City outfall 15 is located just upstream of the iAOPC.

2. Section 11.3.19.3.1 Historical maps show an oil pipeline extending from the PGE Station E northerly along the eastern site boundary of the Sulzer (now Dolan) property to the River near current City outfall 15. The presence of this pipe was investigated by PGE through soil borings and test pits. Evidence of the pipeline (i.e. significant contamination, direct observation) was not observed, and it was concluded the pipe had been removed. DEQ did not require additional evaluation of the pipeline.

3. Section 11.3.19.3.4 There is not an active groundwater treatment system at the site. The system was shut down in the mid 1990s with DEQ approval. The system addressed gasoline-related constituents. A release of chlorinated hydrocarbons from a waste oil tank impacted groundwater. A soil removal was conducted in the mid 1990s and concentrations of chlorinated hydrocarbons in groundwater were below their respective DEQ Level II Screening Level Values (SLVs) for aquatic receptors in freshwater.

4. More recently, PAH concentrations were detected in direct-push borings, advanced along the shoreline, near or marginally above screening level values. It should be noted that PAHs have not been identified as an iCOC in sediment near the site.

5. Groundwater occurs at a depth of approximately 20 feet, well below the depth of the local storm drain lines. Therefore groundwater migration along a preferential pathway can be ruled out.

6. Comments on Table 10.5-1 This table is speculative when it comes to historic releases, and does little in the way of presenting a balanced view. DEQ source control evaluations and actions are aimed at current sources. In many cases DEQ has made professional judgments on COIs. The report considers this equivalent to "insufficient information" to evaluate a source. This is a common reason for discrepancies in DEQ's view of the upland sites.

7. It would be more useful for this table to identify COPCs based on upland screening. Many of the COIs do not carry through as COPCs. The table implies that COIs are present at actionable levels.

8. DEQ does not consider groundwater a significant pathway.

9. The bank is riprapped, therefore erosion is not a pathway of concern.

City CSO Project Table 10.5-1

Based on the City's preliminary evaluation, the following are COIs identified for their outfalls that are not listed on the table:

iAOPC 14: PAHs

iAOPC 17: PAHs

iAOPC 18: PAHs, Bis-phthalate, metals

iAOPC 19: Lead, Zinc

iAOPCs 20, 21, 22, 23: PAHs

iAOPC 24: Zinc

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